

## WATER QUALITY OBJECTIVES IN CANADA

Water quality objectives are used widely in Canada, particularly for boundary waters (see legend for details).



## HOW TO FIND OUT MORE ABOUT WATER QUALITY OBJECTIVES

The Water Quality Branch of Environment Canada works closely with provincial agencies to develop water quality objectives. It encourages their development and use throughout Canada by organizing workshops and promoting the exchange of technical information. In addition, the Water Quality Branch also works closely with the Canadian Council of Resource and Environment Ministers to develop a set of official *Canadian Water Quality Guidelines*. These guidelines provide detailed technical information on water quality and uses.

The Water Quality Branch also provides up-to-date advice on water quality developments and regional issues. It participates in many intergovernmental committees involved in developing water quality objectives and in assessing compliance with the objectives. The Branch also provides advice, prepares national and regional water quality assessments and publishes reports which compare water quality conditions with the objectives.

To obtain more information on water quality measurements, guidelines and objectives for your region, call or write:

Water Quality Branch  
Environment Canada  
Ottawa, Ontario  
K1A 0E7  
Telephone: (819) 997-1920

### Regional Offices:

Water Quality Branch  
Atlantic Region  
Environment Canada  
P.O. Box 861, Federal Building  
1075 Main Street  
Moncton, New Brunswick  
E1C 8N6  
Telephone: (506) 857-6606

Water Quality and Quantity Programs  
Quebec Region  
Environment Canada  
Capitaine Bernier Laboratory  
1001 Pierre-Dupuy Street  
Longueuil, Quebec  
J4K 1A1  
Telephone: (514) 646-1035

Water Quality Branch  
Ontario Region  
Environment Canada  
Canada Centre for Inland Waters  
P.O. Box 5050  
867 Lakeshore Road  
Burlington, Ontario  
L7R 4A6  
Telephone: (416) 336-4663

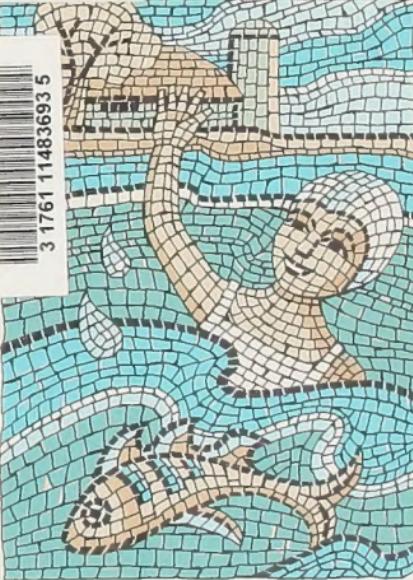
Water Quality Branch  
Western and Northern Region  
Environment Canada  
Motherwell Building  
1901 Victoria Avenue  
Regina, Saskatchewan  
S4P 3R4  
Telephone: (306) 780-5322

Water Quality Branch  
Pacific & Yukon Region  
Environment Canada  
1001 West Pender Street  
Vancouver, British Columbia  
V6E 2M9  
Telephone: (604) 666-6038

# IS THE WATER SAFE TO USE?

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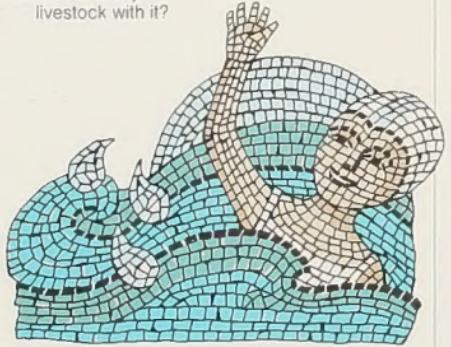
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Cat. No. En 37-77/1987E  
ISBN 0-662-15248-4

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## IS THE WATER SAFE TO USE?

Is the water safe?  
Can I swim in it?  
Can I use it to water my garden?  
Can I water my  
livestock with it?



Chances are you've heard these questions before. You may have asked them yourself. They are indeed important questions, and the answers to them and to others about water quality generally depend on three factors:

- measurements of the quality of the water in question,
- guidelines establishing safe levels of water quality for specific uses of water, and
- water quality objectives for specific lakes and rivers.

## HOW DO WE MEASURE WATER QUALITY?

Scientists analyze water from thousands of locations on lakes and rivers in Canada. They test the water for pollutants, dissolved oxygen, temperature, and many other factors. By comparing test results to water quality objectives we obtain a practical measure of the quality of the water tested.

### SOME DEFINITIONS

**Water quality:** Determined by the kinds and amounts of matter dissolved and suspended in water (e.g., bacteria, pesticides, metals).

**Water quality guideline:** The water quality recommended for a single water use (e.g., livestock watering).

**Water quality objective:** The water quality necessary for all intended uses at a given location.



## WHAT ARE WATER QUALITY GUIDELINES?

Water quality guidelines are established by scientists. These guidelines tell us how "clean" the water must be for each major water use. The official *Canadian Water Quality Guidelines* describe the water quality needed for such uses as:

- municipal
- agricultural
- recreational
- industrial
- and to sustain aquatic life.

Guidelines apply to a particular use of water only. Water quality objectives are derived from guidelines and cover multiple uses.

## HOW ARE WATER QUALITY OBJECTIVES DEVELOPED?

A water quality objective tells us how much (or how little) of a substance we, as a society, will tolerate in a particular body of water with certain uses.

Objectives can be set for physical properties (color, odor, turbidity), chemical concentrations (metals, pesticides) and biological properties (amount of bacteria present).

Objectives are developed by:

- identifying the uses of the lake or river,
- analyzing information on past and present water quality,
- carrying out special water quality studies,
- consulting *Canadian Water Quality Guidelines*,
- studying social and economic factors (e.g., cost of pollution to the population and cost of remedial action to industry).

All this information is taken into consideration when setting water quality objectives for the uses of a given lake, river or other body of water.

Objectives are site-specific, that is, they apply to a particular lake, river or estuary.

## WHY DO WE USE WATER QUALITY OBJECTIVES?

Water quality objectives are established to define the level of water quality needed to protect water uses.

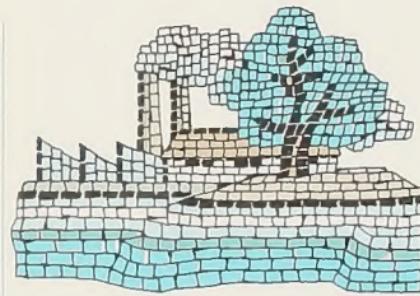
They help to:

- assess the water quality of rivers and lakes,
- develop pollution control measures,
- evaluate the success of clean-up programs.

For rivers and lakes shared by Canada and the United States, water quality objectives are often part of international agreements and are used as a basis for clean-up programs.

For rivers that flow across provincial boundaries, water quality objectives are often a part of interprovincial agreements.

When the measured levels of a polluting substance differ significantly from what is required by an objective or a guideline, an investigation of the cause and remedial action will normally be undertaken by the appropriate level of government.



## THE EXPANDING USE OF WATER QUALITY OBJECTIVES AND GUIDELINES

Water quality guidelines have been published since the early 1950s. They are used in Canada, the United States, Australia, Great Britain, France and other countries to develop water quality objectives.

In Canada, several Canadian provinces (see map) began to develop water quality objectives in the 1960s and 1970s. These objectives have been updated and expanded regularly since their first publication.

Canada and the United States began using water quality objectives for boundary waters at about the same time. Objectives were set for the Red River in 1969, the Great Lakes in 1972 and 1978, and the Poplar River in 1981, among others.

In 1972, the Prairie provinces used water quality objectives as the basis for an agreement on the quality of water in rivers flowing between them.

In 1987, the Canadian Council of Resource and Environment Ministers published the *Canadian Water Quality Guidelines* to provide a national basis for developing water quality objectives.

